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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,888	05/18/2006	Didier Courtois	112701-734	8588

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EXAMINER	
KETTER, JAMES S	
ART UNIT	**PAPER NUMBER**
1636	

NOTIFICATION DATE	DELIVERY MODE
06/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENTS@BELLBOYD.COM

Office Action Summary	Application No.	Applicant(s)	
	10/595,888	COURTOIS ET AL.	
	Examiner	Art Unit	
	James S. Ketter	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-10 and 14* is/are rejected.

7)☒ Claim(s) *4 and 11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/27/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant is advised that should claim 1 be found allowable, claim 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 4 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5-10 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Familletti (cited as 1 on the IDS filed 27 November 2006).

Claim 1 is drawn to a bioreactor for culturing living cells in a liquid culture medium comprising at least one stationary tank enclosing the cells and liquid culture medium, and at least one means for introducing single large gas bubbles at a bottom of the vessel, the single large bubble having a width from 50 to 99% of the tank width. Claim 3 specifies within claim 1 that

the bioreactor comprises a means for programming volume and frequency of large bubbles. Claim 5 specifies within claim 1 that the stationary tank is surrounded by a rigid outer container. Claim 6 specifies within claim 1 that the upper part of the tank is flared. Claim 7 specifies within claim l that the tank has a cross-sectional shape selected from the group consisting of cylindrical and oval. Claim 8 is drawn to a method for culturing cells selected from the group consisting of plant, animal cells and micro-organisms comprising the steps of using at least one stationary tank enclosing the cells and liquid culture medium, and introducing single large gas bubbles having a width from 50 to 99% of a width of the tank at a bottom of the vessel. Claim is drawn to a method for culturing cells and producing biomass cells, embryogenic plant cells, metabolites, secondary plant metabolites, and recombinant molecules comprising the steps of using at least one stationary tank enclosing the cells and liquid culture medium, and introducing single large gas bubbles having a width from 50 to 99% of a width of the tank at a bottom of the vessel. Claim 10 specifies within claim 1 that the width of the single large bubble is 60% to 99% of the tank width. Claim 14 is drawn to a bioreactor for culturing living cells in a liquid culture medium comprising: at least one stationary tank enclosing the cells and liquid culture medium, and an inlet allowing a single large gas bubble to be received at a bottom of the vessel, the single large bubble having a width that is 50 to 99% of the tank width.

Familletti teaches, e.g., at Figure 1, a bioreactor comprising a gas inlet at the bottom which releases one single large bubble at a time. The bubble is clearly more than half of the diameter of the tapered portion of the lower portion of the bioreactor. The top portion of the lower tank of the bioreactor flares at the top. At column 3, fourth paragraph, it is taught that Jurkat cells are grown to produce IL-2. Also taught for growth in this bioreactor are microbial

cells. Component 13 of Figure 1 is a valve, the setting of which would determine or program the volume and frequency of the bubbles. At column 3, paragraph 3, methods of using the bioreactor are taught, as well.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Familletti (cited above).

Claim 1 is described above. Claim 1 id included in the present rejection as it encompasses all of the embodiments of claim 2. Claim 2 specifies within claim 1 that the single large bubble has a volume of at least 65 cm^3.

Familletti is described above. Familletti differs from the claimed invention in not specifically teaching a volume of the bubble of at least 65 cubic centimeters. However, at column 2, second full paragraph, it is taught that the disclosed bioreactor could be scaled up. Clearly, only a three- or four-fold scaling-up of the device shown in Figure 1 of Familletti would produce a bubble with a radius of approximately 2.5 cm, or approximately 1 inch, which would yield a spherical volume of approximately 65 cubic centimeters. Nothing in Familletti teaches against this small degree of scaling-up. It would have been obvious to one of ordinary skill in the art to have scaled up the bioreactor of Familletti as suggested and motivated therein to produce a bioreactor for larger-scale production, such that a 65 cubic centimeter bubble would be produced. The motivation to scale up a reaction is and was well-known in the art and would have been apparent to one of ordinary skill in view of the suggestion of Familletti that such scaling-up could be used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Ketter whose telephone number is 571-272-0770. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSK
25 June 2008

/James S. Ketter/
Primary Examiner, Art Unit 1636